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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JACKSON, JAKIEDA R

ART UNIT PAPER NUMBER

2655

DATE MAILED: 03/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/804,345

Applicant(s)

HENRIE ET AL.

Examiner

Jakieda R Jackson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. In response to the Office Action mailed July 20, 2004, applicant submitted an amendment filed on October 20, 2004, in which the applicant traversed and requested reconsideration with respect to **claims 1, 8 and 15**.

Response to Arguments

2. Applicant(s) argued regarding independent claims 1 and 8 that Cole et al. does not teach "a program residing in memory and configured to be run on the processing device, the program vary the output amplitude of the sound generator depending on the frequency output of the sound generator.

Regarding independent claim 15, applicant(s) argued that Cole et al. does not teach accessing a lookup table with or calculating volume adjustment information according to the sound frequency to be generated.

Applicant(s) arguments with respect to claims 1, 18 and 15 have been considered, but are moot in view of new grounds of rejections.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1 and 3** are rejected under 35 U.S.C. 102(b) as being anticipated by Tai (USPN 5,781,636).

Regarding **claim 1**, Tai discloses an apparatus configured to improve sound quality for a sound generator, comprising:

a processing device (not shown; column 3, lines 6-32);

a memory coupled to the processing device (figure 3, element 10; column 3, lines 6-32);

a sound generator coupled to the processing device (figure 3, element 1; column 3, lines 6-32); and

a program residing in memory (figure 3, element 10) and configured to be run on the processing device (CPU not shown), the program configured to vary the output amplitude of the sound generator (amplitude-variant signal) depending on the sound generator frequency (column 3, lines 6-32).

Regarding **claim 3**, Tai discloses the apparatus wherein the program references a look up table (memory; figure 3, element 10) including information

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used to determine the magnitude to vary the output amplitude of the sound generator (column 3, lines 6-32).

5. **Claims 15-20** are rejected under 35 U.S.C. 102(b) as being anticipated by Dougherty (USPN 5,872,852).

Regarding **claim 15**, Dougherty discloses a method of improving sound quality for a sound generator, comprising:

providing a signal indicative of a sound frequency to be generated (column 14, lines 15-20 and column 16, line 66 – column 7, line 14);

accessing a look up table (a table) according to the sound frequency to be generated to obtain volume adjustment information (column 5, lines 22-32 and column 20, lines 43-46);

providing the current volume setting (current values of the desired volume; column 5, lines 22-32); and

adjusting the volume based on the volume adjustment information (figure 3, element 322 and column 7, lines 47-54).

Regarding **claim 16**, Dougherty discloses a method further comprising:

scaling the volume adjustment information based on the current volume setting to obtain a scaled volume adjustment (figure 3, element 122 with column 4, lines 55-63).

Regarding **claim 17**, Dougherty discloses a method further comprising:

subtracting the scaled volume adjustment from the current volume setting to obtain a desired volume setting (figure 3, element 124).

Regarding **claim 18**, Dougherty discloses a method further comprising: setting the volume to the desired volume setting (setting the desired volume; column 13, lines 24-33).

Regarding **claim 19**, Dougherty discloses a method further comprising: generating a sound at the sound frequency to be generated (column 14, lines 15-20 and column 16, line 66 – column 7, line 14).

Regarding **claim 20**, Dougherty discloses a method of improving sound quality for a sound generator, comprising:

providing a signal indicative of a sound frequency to be generated column 14, lines 15-20 and column 16, line 66 – column 7, line 14;

calculating volume adjustment information according to the sound frequency to be generated (column 15, lines 39-45);

providing the current volume setting (current values of the desired volume; column 5, lines 22-32); and

adjusting the volume based on the volume adjustment information (figure 3, element 322 and column 7, lines 47-54).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 2, 4 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tai in view of Klein (USPN 6,011,473).

Regarding **claim 2**, Tai disclose an apparatus configured to improve sound quality for a sound generator, but lacks use of a sound generator as a buzzer.

However, Klein discloses the use of a sound generator as a buzzer (column 4, line 20). The use of buzzers in sound generators may be beneficial users who will like to be alerted about the status of a device.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Tai's apparatus to use buzzers, as taught by Klein, to alert a user on the status of a device.

Regarding **claims 4 and 7**, Tai disclose an apparatus configured to improve sound quality for a sound generator, but lacks the incorporation of a sound generator into a handheld/ mobile electronic device.

However, Klein teaches use of a sound generator incorporated within a portable or mobile device computer (Abstract). The use of sound generators

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incorporated within a mobile computer is beneficial to alert users about the status of a device.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Tai's apparatus incorporating a sound generator within a mobile device, as taught by Klein, to alert a user on the status of a mobile device.

8. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tai in view of Campbell (USPN 6,532,005).

Regarding **claim 5**, Tai disclose an apparatus configured to improve sound quality for a sound generator, but lacks the incorporation of a sound generator into a mobile electronic device.

However, Campbell teaches the use of a PDA with a sound generator incorporated for use in an audio positioning device (column 3, line 34). PDA'S equipped with sound generators are necessary for applications related to providing status alerts to users.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Yai's apparatus by incorporating a sound generator within a PDA device, as taught by Campbell, to provide sound within PDA devices.

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9. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tai in view of Cohen (USPN 4,283,600).

Regarding **claim 6**, Tai disclose an apparatus configured to improve sound quality for a sound generator, but lacks the use of a filter as a means to flatten the frequency response of a sound generator.

However, Cohen teaches the use of de-emphasis and emphasis filters to produce a flattened frequency response of the output signal of a sound generator (column 7, line 48). A flattened frequency response of sound is crucial for the delivery of good sound quality.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Tai's apparatus by the use of a filter to flatten the frequency response, as taught by Cohen, since it would have been necessary to deliver good sound quality.

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10. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tai view of Pfeiffer (USPN 4,618,985).

Regarding **claim 8**, Tai discloses everything as claimed in claim 1, but lacks the following limitations:

- a. A modulator circuit coupled to the processor
- b. A transistor coupled the modulator circuit
- c. A sound generator coupled to the transistor

However, Pfeiffer teaches items a, b and c (column 16, line 55; fig 9, element 540 and fig.10, elements 608 and 602. Pfeiffer describes the voice synthesizer circuit [claimed sound generator] (Fig 9) and its relationship to the modulator (540) with built-in transistor (542). Fig 10 shows the relationship of the voice synthesizer (claimed sound generator) (608) and the microprocessor (602). Modulators with built-in transistors are necessary to generate good quality sound.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Tai's apparatus by incorporating a modulator with a transistor coupled to the sound generator, as taught by Pfeiffer, to generate a better sound quality.

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11. **Claim 9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tai in view of Pfeiffer, as applied to claim 8, above and in further view of Groff (USPN 4,446,334).

Regarding **claim 9**, the combination of Tai and Pfeiffer disclose the use of a processor with memory a sound generator, a modulator and transistor, but lacks the use of a Darlington transistor.

However, Groff teaches the use of a Darlington transistor (column 8, line 52). Darlington transistors are necessary to produce a better quality sound.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the combination of Tai and Pfeiffer's apparatus with the use of a Darlington transistor, as taught by Groff, in order to provide a better quality sound.

12. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tai in view of Pfeiffer, as applied to claim 8, above and in further view of Campbell (USPN 6,532,005).

Regarding **claim 10**, the combination of Tai and Pfeiffer discloses the use of a processor with memory, a sound generator, a modulator and a transistor, but lacks the use of a sound generator with the above features incorporated into a PDA.

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However, Campbell teaches a sound generator incorporated into a PDA (column 3, line 34). PDA'S equipped with sound generators are necessary for applications within its memory related to sound.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the combination of Tai and Pfeiffer's apparatus by incorporating a sound generator device, as taught by Campbell, to provide good sound quality audio within a PDA devices.

13. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tai in view of Pfeiffer, as applied to claim 8 above, and in further view of Klein (U.S. Patent 6,011,473).

Regarding **claim 11**, the combination of Cole and Pfeiffer disclose the use of a processor with memory a sound generator and a modulator, but lacks the incorporation of a sound generator into a mobile electronic device.

However, Klein teaches use of a sound generator incorporated within a portable or mobile device (column 4, lines 23). The use of sound generators incorporated within a computer may be beneficial to alert users about the status or unauthorized removal of their mobile device.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the combination of Cole and Pfeiffer by incorporating a sound generator within a mobile device as taught by Klein to alert a user on the status of a mobile device.

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14. **Claims 12,13 & 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tai in view of Pfeiffer, as applied to claim 8 above, and further in view of data (attached to references) which show widespread use of Bujeon and Citizen sound generator circuit within the industry over twenty years.

Regarding **claims 12, 13 and 14**, the combination of Tai and Pfeiffer discloses the use of a processor with memory, a sound generator and a modulator, but lacks the use of Bujeon or Citizen sound generators.

However, based on Bujeon (www.bujeon.com/history) and Citizen www.c-c-e.co.jp/company) company data, the sound generators for both companies have been widely used throughout the industry as buzzers for over twenty years before the claimed invention. The use of sound generators as buzzers incorporated within a computer may be beneficial to alert users in case of theft or other status information.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify the combination of Tai and Pfeiffer by the use of Bujeon and Citizen sound generators as buzzers since they were widely accepted within the industry for providing alerts or status information.

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Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 703. 305.4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ
March 1, 2005


DAVID L. OMETZ
PRIMARY EXAMINER